Mode of Mechanical Ventilation for Patients with Congenital Heart Disease During Intra-Hospital Transport – A National Survey

Muhammad B. Rafique, MD*, Tariq Syed, MS¶, Nischal K. Gautam, MD*

*Associate Professor, ¶Research Coordinator

Department of Anesthesiology, McGovern Medical School at UTHealth, Houston, Texas

Introduction

Mechanical ventilation (MV) management for Intra-Hospital transport of intubated children with congenital heart disease lacks national standards or guidelines. Also it has not been studied and only adult data is available.1,2 After local institutional IRB approval we conducted a survey (survey monkey link & fax) to find national trend of preferred device for mechanical ventilation in this patient population.

Methods

Due to lack of a comprehensive database of pediatric-CV anesthesia directors, a survey monkey link was sent by email to all 127 pediatric anesthesia program directors in North America and in case of undeliverable email or email not available, the survey was sent by fax. The survey consisted of 6 questions. A reminder was sent at one week, 3 week and 5 week mark.

References


Results

A total of 29 responses, i.e. 22.83% were received. Only two (6.9%) institutions have a written policy for preferred transport MV device. For neonates, among the responders 34.48% prefer transport ventilator, 31.03% Jackson Rees circuit, 17.24% Ambu-Bag and the rest use a combination of different devices. Immediately after cardiac surgery, during transport to ICU, 41% prefer Jackson-Rees circuit, 34% use Ambu-Bag, 10% use transport ventilator while rest use combination of other devices. Again Jackson-Rees circuit is the most preferred device (44.83%) for intubated children during intra-hospital transport, followed by Ambu-Bag at 27%, while rest use transport vent or a combination of other devices. For patients with single ventricle physiology opinion is evenly distributed for all devices at about 25% (Please see Table).

Few institutions use neo-puff with oxygen blender for neonates as well as single ventricle patients.

Conclusion

Intra-hospital transport mechanical ventilation for children with congenital heart disease has not been formally studied. With this survey we try to document the national practice trends. In conclusion, most centers do not have written policy and Jackson-Rees circuit, Ambu-bag and transport ventilator is the order of preference in general.

This table shows 4 questions with he response percentage each device received. Q1 was a yes/no question concerning policy. Only 2 institutions have a written policy in place. Q6 asked the name of the transport ventilator used. Only 7 respondents gave an answer, and the majority named the ICU vent at their respective institute.